

REMARKS

Claims 3-9 are pending in this application. By this Amendment, claims 3-9 have been amended and claims 1 and 2 have been canceled without prejudice to or disclaimer of the subject matter disclosed therein. Reconsideration of the application is respectfully requested.

Applicant gratefully acknowledges the indication that claim 4 contains allowable subject matter.

The Office Action rejects claims 4 and 6-9 under 35 U.S.C. §112, first paragraph. This rejection is respectfully traversed.

The Office Action alleges that the phrases "with respect to the access which passes through the center of the visual field and which is perpendicular to a direction in which the positional deviation is detected", "the access which passes through the center of the visual field and which is perpendicular to a direction in which the positional deviation is detected" and "the access which passes through the center of said image field and which is perpendicular to a detecting direction of said positional deviation in alignment" constitutes new matter. Applicant respectfully disagrees.

Specifically, Applicant submits that the above-described phrases simply render explicit the meaning of "the center of the visual field" as disclosed on page 6, lines 18-20 and page 18, lines 10-15 of Applicant's specification. However, in order to alleviate the Office Action's concerns, claims 4 and 6-8 are amended to obviate the rejection by replacing the alleged new matter with "the axis which passes through the center of the visual field." It is respectfully submitted that this language is equivalent to the "center of the visual field" discussed in Applicant's specification.

The Office Action further alleges that the term Q as defined with the phrase "n is the number of lines in the selected pattern area" constitutes new matter. Applicant respectfully disagrees.

Applicant submits that the phrase defining the term Q, recited in claims 7 and 9, is not new matter. The term Q is disclosed in Applicant's specification on page 15, lines 2-6. The parameter n in equation 1 of claim 7 is simply a generic term that is disclosed in the exemplary embodiment described in Applicant's specification as being equal to 7. Fig. 4a clearly shows that there are 7 linear marks 61-67 corresponding to the denominator of the factor 1/7.

The specification of the present invention, on page 15, lines 2-6, describes "signal intensity differences ΔI of all the linear marks 61-67 are averaged, thereby obtaining a value $Q=1/7 \times \Sigma \Delta I/I$ representing an asymmetry of the L/S mark pattern image." Accordingly, since the term "average" means the arithmetic mean, the recitation of a factor of 1/n is simply a generic term which corresponds to the number of linear marks.

The Office Action also alleges that the recitation of "at least one set of patterns which are symmetric with respect to the center of the image field" constitutes new matter. Applicant respectfully disagrees.

Applicant submits that, in Fig. 4a, the sets 61-63 and 65-67 are symmetric with respect to the center of the image field (i.e., linear mark 64). Accordingly, Applicant respectfully submits that this language of claims 6 and 7 is not new matter.

The Office Action rejects claims 4 and 6-9 under 35 U.S.C. §112, second paragraph, as indefinite. Claims 4 and 6-9 are amended to obviate this rejection. The claims are not narrowed by such amendments.

In view of the foregoing, it is respectfully submitted that claims 4 and 6-9 fully comply with 35 U.S.C. §112. Accordingly, withdrawal of the rejections is respectfully requested.

The Office Action rejects claims 1-2 and 8 under 35 U.S.C. §102(b) over Takahiko (JP 08-115874). This rejection is moot with respect to cancelled claims 1-2 and is respectfully traversed with respect to claim 8.

In particular, Applicant respectfully submits that Takahiko does not disclose or suggest an optical positional deviation detecting apparatus comprising, *inter alia*, a field stop provided on an irradiation optical system and an image field position adjustment mechanism for adjusting a position of the field stop, as recited in claim 8.

Takahiko teaches an adjusting method for a position deviation measuring optical system wherein a deviation value of the optical system is calculated by rotating the position deviation measuring pattern by 180° (Abstract). Takahiko discloses a field stop (field diagram 54) and a one way mirror 55 combined to a lens system that generates light (Section 0011 of the Translation of JP 08-115874). However, there is no disclosure or suggestion in Takahiko of adjusting the position of the field stop. Accordingly, Takahiko does not disclose each and every feature of independent claim 8, and hence does not anticipate independent claim 8. As such, Applicant respectfully submits that independent claim 8 defines subject matter that is patentable over Takahiko. Accordingly, withdrawal of the rejection is respectfully requested.

The Office Action rejects claims 1, 2 and 8 under 35 U.S.C. §103(a) over Sugaya et al. (U.S. Patent No. 5,754,299). This rejection is moot with respect to canceled claims 1-2 and is respectfully traversed with respect to claim 8.

Applicant respectfully submits that Sugaya does not disclose, teach or suggest an optical positional deviation detecting apparatus wherein an image field position is so adjusted that at least one set of areas which are symmetric with respect to the center of the image field is selected and an amount of rotational asymmetric aberration for every selected area is symmetric with respect to the access which passes through the center of the image field, as recited in independent claim 8.

Specifically, Sugaya teaches an adjusting method in which the average value of the asymmetry of the right and left signal intensities of the light pattern is obtained with respect to

a predetermined area, the focus characteristic of the average value of this signal intensity is obtained, and an adjustment is made so that the asymmetry of the signal intensity of the predetermined area may be within a certain value (Figs. 9-12). Further, Sugaya teaches that the symmetry of aberration is corrected by correcting the position of each lens in the imaging optical system relative to the optical axis (col. 28, lines 45-59). According to Sugaya, the index of adjustment, which is the average value of the difference in asymmetry between the right and the left signal intensities of the light pattern, is not varied even if the focus is changed with respect to a predetermined area.

According to claim 8, adjustment is so made that the asymmetry focus characteristic is made symmetric with respect to an axis that passes through the center of the visual field. Sugaya does not select one set of pattern areas which are symmetric with respect to the center of the image field, and does not disclose that an amount of rotationally asymmetric aberration for every selected area is so adjusted to be symmetric with respect to the axis which passes through the center of the image field. Thus, Sugaya does not disclose, teach or suggest the features of independent claim 8. As such, Applicant respectfully submits that independent claim 8 defines subject matter that is patentable over Sugaya. Accordingly, withdrawal of the rejection is respectfully requested.

The Office Action rejects claims 3 and 5-7 under 35 U.S.C. §103(a) over Sugaya in view of Iwanaga et al. (U.S. Patent No. 5,920,398). This rejection is respectfully traversed.

Applicant respectfully submits that Sugaya does not disclose, teach or suggest an optical positional deviation detecting apparatus wherein an image field position adjustment mechanism adjusts the image field position on the basis of an asymmetric focus characteristic of the line and space mark pattern image obtained when forming the image of the line and space mark pattern within the image field area of an imaging field device, as recited in independent claim 3.

Sugaya teaches an index for correcting or adjusting each element which is obtained from the entire pattern area, but Sugaya has no teaching that the pattern is divided into a pattern (line and space) within the image field area. According to the method disclosed in Sugaya, adjustment for each element is made based on focus dependency of an asymmetry factor obtained for the whole pattern area.

Iwanaga is relied on by the Office Action only to disclose using an asymmetric focus curve to calculate focus correction in a surface position detecting method. As such, Applicant respectfully submits that Iwanaga fails to cure the deficiencies of Sugaya in disclosing a plurality of line and space patterns within the image field area. Accordingly, Applicant submits that the combination of Sugaya and Iwanaga does not disclose, teach or suggest the subject matter recited in independent claim 3. As such, Applicant submits that independent claim 3 defines subject matter that is patentable over Sugaya and Iwanaga. Also, at least in view of their dependence on allowable claim 3, claims 6 and 7 define subject matter that is patentable over Sugaya and Iwanaga.

Applicant also respectfully submits that Sugaya fails to disclose, teach or suggest an optical positional deviation detecting apparatus wherein an image field position adjustment mechanism adjusts the field stop position on the basis of the asymmetric focus characteristic of the line and space mark pattern image obtained when forming the image, as recited in independent claim 5.

Sugaya discloses that the adjustment of each element is made based on focus dependency of the asymmetry factor obtained for the whole pattern, but has no teaching on selecting an area with a line and space mark in order to adjust the image field position on the characteristic of the line and space mark pattern, as recited in independent claim 5. Moreover, Applicant asserts that Iwanaga fails to cure this deficiency of Sugaya in failing to disclose

these features. Accordingly, Applicant asserts that independent claim 5 defines subject matter that is patentable over Sugaya and Iwanaga.

For at least the reasons discussed above, Applicant respectfully requests that the rejection of claims 3 and 5-7 over Sugaya in view of Iwanaga be withdrawn.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 3-9 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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